

- Wetter. Berlin. 26. Jahrgang. Jan., 1908.*  
**Mylius, G.** Ueber Böen und Gewitter. p. 1-10.  
**Lindemann, —.** Die grössten Tagesmengen des Niederschlags im Königreich Sachsen von 1866 bis 1905. p. 10-13.  
**Joester, Karl.** Die Föhnerscheinungen im Riesengebirge. p. 14-17.  
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#### RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. FITZHUGH TALMAN, Librarian.

The following have been selected from among the titles of books recently received, as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies. Most of them can be lent for a limited time to officials and employees who make application for them. Anonymous publications are indicated by a —.

- Baden.** Zentralbureau für Meteorologie und Hydrographie. Niederschlagsbeobachtungen . . . Jahrgang 1908. Karlsruhe. 1909.  
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- Bauer, George.** Ein Beitrag zur Förderung des Unterrichts in der Meteorologie. Greifswald. 1908. 42 p. 8°. (Beilage zum Jahrbericht des Gymnasiums und der Realschule zu Greifswald. Ostern 1908.)
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- Belgium. Observatoire royal.** Annales. Nouvelle série. Physique du globe. Tome 4. Fasc. 1. Bruxelles. 1908. 138 p. f°.
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- Besson, Louis.** Sur la théorie des halos. Paris. 1909. 89 p. (Thèse-Faculté des sciences de Paris.)
- Bürgel, Bruno H.** Wetter-Kalender und kritische Tage . . . 1909. Berlin. 1909. 96 p. 24°.
- Calvert, Philip P.** Relations of the odonate fauna of Mexico and Central America to temperature, rainfall, vegetation areas and altitude. (From Proceedings of the Academy of natural sciences of Philadelphia, Oct., 1908. p. 473-491.) [Contains temperature chart of Mexico and Central America.]
- Carnegie institution.** Year book. No. 7, 1908. Washington. 1909. vii, 240 p. 8°.
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- Costanzo, G., & Negro, C.** Sopra alcuni fenomeni di ionizzazione ottenuti con l'acqua piovana. Roma. 1908. 9 p. f°. (Estr. Memorie della Pontificia accademia Romana dei nuovi Lincei. v. 26.)
- Sulla formazione della pioggia. Milano. 1909. 22 p. 8°.
- Craig, J. I.** The climate of ancient Palestine. Alexandria. 1909. 3 p. 4°. (Reprinted from the "Cairo scientific journal." no. 27, 1908.)
- A meteorological expedition to Addis Abbaba in 1907. Alexandria. 1909. 5 p. 4°. (Reprinted from the "Cairo scientific journal," no. 27, 1908.)
- Davis, W. M.** Practical exercises in physical geography. Boston. 1908. xi, 148 p. 12°.
- Díaz, Severo.** . . . Un temporal de invierno. Primeros pasos en la meteorología de precisión. México. 1908. 12 p. 8°.
- Djebaroff, Iw. As. Th.** Ein Beitrag zur Wasserverdunstung des nackten und bebauten Bodens. Halle a. S. 1907. 152 p. 8°. (Inaug.-diss.-Halle. a. S.)
- Ebstein, [Wilhelm].** Eisenach, seine Heilkörper und seine medizinische Bedeutung. Jena. 1908. ix, 104 p. 8°. ["Das Klima," p. 29-58.]
- Egypt. Survey department.** Meteorological report. Parts 1-2. Cairo. 1908. 65; vii, 202 p. f°.
- Ekholm, Nils.** Om lufttryckets ändringar och därmed sammanhängande företeelsen. (Ur Ymer, Tidskrift utgivne af Svenska sällskapet för antropologi, och geografi, Arg. 1908, H. 4.)
- Elsner, Georg von.** Wissenschaftliche Ergebnisse der Expedition Filchner nach China und Tibet 1903-1905. IX. Band. Barometrische Höhenmessungen und meteorologische Beobachtungen. Berlin. 1908. viii, 236 p. 4°.
- Fischli, Fritz.** Das Verhalten der meteorologischen Elemente und Erscheinungen in der Vertikalen. Bern. 1908. 129 p. 8°.
- Fleming, J. A.** An elementary manual of radiotelegraphy and radio-telephony. New York. 1908. xiv, 340 p. 8°.
- Fortier, Samuel.** Climate of Orland [Cal.] and vicinity. (In Irrigation in the Sacramento valley, California. U. S. Office of experiment stations. Bull. 207.)
- Fox, Chas. J. J.** . . . On the coefficient of absorption of the atmospheric gases in distilled water and sea water. Part 2: Carbonic acid. Copenhagen. 1909. 31 p. 4°. (Conseil permanent international pour l'exploration de la mer. Publications de circonstance no. 44.)
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- Germany. Deutsche Seewarte.** Deutsches meteorologisches Jahrbuch 1907. Hamburg. 1908. vi, 200 p. f°.
- Gerosa, Giuseppe.** Elementi di meteorologia . . . Livorno. 1909. x, 316 p. 8°.
- Grothe, Hugo.** Meteorologische Stationen in der asiatischen Turkei. (S.-A. Beiträge zur Kenntnis des Orients. Band 6, p. 149-154.)
- Hecker, Alfred.** . . . Die gestrengen Herren. (Landwirtschaftliche Jahrbücher. Berlin. 1908. p. 711-729.)
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- Jensen, Chr.** Die gegenwärtigen Probleme und Aufgaben welche mit dem Studium der atmosphärischen Polarization verknüpft sind. Kiel. 1908. [166]-175 p. 4°. (Abdruck aus den Astr. Nachr. Nr. 4283. Bd. 179. November, 1908.)
- Jersey. Observatoire St. Louis.** Bulletin des observations météorologiques. 15 année 1908. Jersey. 1908. 31 p. 4°.
- Knörzer, Alb.** Die Temperaturnittel Würzburgs 1880-1903. Eichstatt. 1904. 16 p. 8°.
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- Lafiamme, C.** Notes de météorologie. Quebec. 1904. 15 p. 8°.
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Patxot y Jubert, Rafael.

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Funkentelegraphische Uebermittlung von Witterungsnachrichten auf dem atlantischen Ozean. Ergebnisse einer Studienreise im August 1908. (S.-A. Marine-Rundschau.) Berlin. [1908.]

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Ergebnisse der Beobachtungen an den Stationen II. und III. Ordnung... 1908. Berlin. 1908. xvi, [123]-267 p. f°.

Ergebnisse der magnetischen Beobachtungen in Potsdam 1903 und 1904. Berlin. 1908. xxxiv, 120 p. f°.

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Same. 1906. Berlin. 1908. viii, 106 p. f°.

Ergebnisse der Niederschlags-Beobachtungen im Jahre 1906. Berlin. 1908. xxxiv, 165 p. f°.

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Die Expedition des Königlich preussischen meteorologischen Instituts nach Burgos in Spanien zur Beobachtung der totalen Sonnenfinsternis am 30. August 1905. Von G. Lüdeling und A. Nippoldt. Berlin. 1908. 92 p. f°. (Abhandlungen Bd. 2. Nr. 6.) Barometrische Tellerdepressionen und ihre wellenförmige Auseinandersetzung. Von W. Wundt. Berlin. 1904. 25 p. f°. (Abhandlungen... Bd. 2. No. 5.)

Richardson, H. W.

Relations of the U. S. Weather bureau to the railroad man. (In official proceedings of the Northern railway club. Duluth, Minn., Jan., 1907. p. 22-31.)

Saxony. Königl. sächsische Landes-Wetterwarte.

...Ergebnisse der meteorologischen Beobachtungen 1904. Dresden. 1908. 88 p. f°.

Schwere, S.

Wetterinstrumente, Wetterkarten und die Wettervoraussage. Zürich. [1908] 39 p. 8°.

Steinmetz, Helmuth.

De ventorum descriptionibus apud Grecos Romanosque. Gottingae. 1907. 88 p. (Inaug.-diss.—Gottingen.)

Timberg, Gustaf.

Popular meteorologi... Stockholm. 1908. viii, 206 p. 4°.

Yuriev, [Dorpat].

Sammlung von Arbeiten, ausgeführt von Studenten am Meteorologischen Observatorium der Universität zur Jurjew (Dorpat). Band 2, 1908. Yuriev. 183 p. 8°.

#### AN ANNOTATED BIBLIOGRAPHY OF EVAPORATION.

By MRS. GRACE J. LIVINGSTON. Dated Washington, D. C., January 8, 1908.

[Continued from the *Monthly Weather Review*, November, 1908.]

1870—Continued.

Dufour, Charles, and F. A. Forel.

Recherches sur la condensation de la vapeur aqueuse de l'air au contact de la glace et sur l'évaporation. Bul. soc. vaud. sci. nat., 1870, 10:621-84; Les mondes, 1871, 26:129-36, 183-9, 242-51. Abstracted in Arch. sci. phys. et nat., 1871, 40:239-73; Ann. chim. et phys., 1871, 25:80-1; Naturforscher, 1872, 5:59-60.

A study of the hygrometric action of glaciers on the atmosphere and vice versa. Conclusions: (1) With air having a vapor pressure less than 4.6 millimeters condensation or evaporation will take place at the surface of the glacier according to the relative pressures of the water vapor of the air and that of the ice. These actions tend to counterbalance each other. (2) Condensation takes place whenever the atmospheric vapor pressure is above 4.6 millimeters. (3) The total result of condensation and evaporation must be very much in favor of the latter. (4) The glacier by these counteracting influences tends to restore the pressure of the water vapor in the air to 4.6 millimeters, except in the case of condensation at temperatures lower than zero. (5) Since, in the latitudes studied, the average hygrometric capacity of the air is above 4.6 millimeters pressure, the glacier exercises a very powerful drying influence on the atmosphere. (6) Condensation tends to prevent the extension of the glacier owing to the heat which it frees.

Forel, F. A., and Charles Dufour.

See Dufour, Charles, and F. A. Forel.

Hajech, Camillo.

Ricerche sperimentali sull' evaporazione di un lago. Rend. r. ist. lomb., 1870, 3 (2):785-90.

Compares the evaporation from three similar instruments exposing a free water surface 1 decimeter square, one floating on the surface of the lake, the second on land near the lake, and the third on land, but farther from the lake. The results obtained from August 31 to October 7, show: (1) The maximum mean hourly evaporation occurred from all three on the same days, viz., September 16 and 17. (2) The quantities evaporated from the three in the daytime, were to each other as 100:140:149; when the sky was cloudy as 100:130:130; after sunset as 100:156:225; and for the entire day as 100:150:180.

Henry, D. Farrand.

Tables of evaporation from observations of the survey of the northern and northwestern lakes. Tables showing comparative readings of evaporators in lake and river, open air, and water. Rpt. Chief Eng., 1870: 570-3.

A table of results shows the difference between simultaneous readings of the evaporator at the meteorological station and one placed in the water at Youngstown, N. Y., from June 11, to September 23, 1869. Evaporation was greatest on land, the ratio between the two being 0.558. Thermometric observations of the air, of the surface of the water in the evaporators, and in the lake showed no definite ratio between the water temperature and the rate of evaporation.

Lamont, Johann von.

Langsam Verdunstung des Wassers in engen Röhren. Münch. Stern. Wochensbl., 1870, (—):263.

Moscati, Pietro.

Lettera al Signor de Saussure con la descrizione d'un atmidiometro e d'altri macchine altintenti alla meteorologia. n. p. 1870. 4to.

Pfaff, A. B. I. F.

Ueber den Betrag der Verdunstung einer Eiche während der ganzen Vegetationsperiode. Sitzber. k. bayer. Akad. Wiss. math. phys. Kl., 1870, 1:27-45. Also Ber. Phys. Med. Soc., 1870, 2. Abstracted in Zeits. Oest. Ges. Met., 1871, 6:10-2. Also Naturforscher, 1871, 4:85-7. Also Gaea, 1871, 7:247-9.

See Hann, 1871, for the results of Pfaff's experiments.

Risler, E.

Evaporation du sol et des plantes. Arch. sci. phys. et nat., 1870, 3:214-28. Also Zeits. f. Naturw., 1872, 6:117-9.

The monthly evaporation during 1869 from soil of different depths is calculated from the difference between the amount of rainfall and the amount artificially drained off, the latter being at least partially corrected by a periodic determination of the moisture content of the soil.

Somerville, Mary.

Physical Geography. London. 1870. 6th ed. p. 223.

The fact that the sea water of the Southern Hemisphere contains more salt than that of the Northern is supposed to be due to the greater evaporation in the former, caused by the southeast trade winds blowing over a greater expanse of water than the northeast. It is computed that 186,240 cubic miles of water are evaporated (annually?) from the surface of the globe, chiefly from intratropical seas. This would cause a lowering of the sea level by 5 feet annually. The equilibrium in these seas, thus disturbed, is restored by means of currents.

Strachan, Robert.

Lamont's vaporimeter. Symons's met. mag., 1870, 5:73-4.

For a description of this instrument see Lamont, 1869.

Symons, G. J.

On evaporation. Brit. rainf., 1870, (—):175-83, (app.).

Experiments were carried on at Strathfield Turgiss with different evaporators, including Howard's, Miller's (a tin vessel with overflow, felt protected), Miller's sand evaporator, a glazed earthenware jar set in the ground, a glass cylinder, Proctor's, Sharples', Fletcher's, etc., of various sizes, etc. Observations on the temperature of the water in each showed that vessels which absorb heat most readily allow much more evaporation than others. A table gives the amount of evaporation for 1870 at various localities in Great Britain, with a description of the methods employed. The large tank used at Strathfield Turgiss is especially notable.

Vogel, K. A.

Versuche über die Wasserverdunstung auf besätem und unbesätem Boden. Abh. k. Bayer. Akad. Wiss. math. phys. Kl., 1870, 10: 321-55.

From experiments similar to those of his previous paper (see 1868) it is concluded that evaporation is greater from limestone soil than from clay soil; greater from unplanted soil, both clay and limestone, than from planted; but greater from peat soil when planted than when unplanted. Results obtained with the "atmidometer," (see Vogel and Reischauer, 1856), showed differences similar to those observed in the absolute humidity of the air over the different soils.

1871.

Buchan, Alexander.

Introductory Text-book of Meteorology. Edinburgh. 1871.

See Buchan, 1868, for an account similar to that on p. 88-91 of this work.

Casella, L.

Catalogue of Scientific Instruments. London. 1871. 8vo. p. 24.

Two metal vessels are described for measuring evaporation from a free water surface, also a recording instrument, in which the changes in the level of a water surface are communicated to a recording cylinder by means of a float and pulley. Doctor Babington's "atmidometer" for measuring evaporation from water, ice, or snow, is mentioned on page 21, but not described.

Dines, G.

Reply to "On Evaporation of Water," by Henry Hudson in Symons's met. mag., 1871. Symons's met. mag., 1871, 6:190-2.

The following statements, made in a previous article, 1870, are reaffirmed: "When the air is saturated with moisture and the water is of the same temperature as the air, neither evaporation nor condensation can take place." "Except as it affects the dew-point, it is a matter of little consequence whether the air is saturated or not; other circumstances being the same, it is the difference between the temperature of the water and that of the dew-point which determines the amount both of evaporation and condensation." The author's experiments with the wet-and-dry-bulb thermometers in obtaining the dew-point lead him to think that they can never give more than an approximation to the moisture in the atmosphere. Hudson's conclusion that water may evaporate at a temperature several degrees below the dew-point when the air is nearly saturated is refuted.

Dufour, Louis.

Sur le siccimètre. Ann. chim. et phys., 1871, 23:78-80.

The siccimeter is designed to measure the difference between evaporation and rainfall (see Dufour, 1869.)

Hann, Julius.

Ueber den Einfluss der Bäume auf die Feuchtigkeit der Atmosphäre und des Bodens. Zeits. Oest. Ges. Met., 1871, 6:10-12.